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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/835,452	04/16/2001	Ehud Levy	40654/257276	5987

23370            7590            05/07/2003  
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EXAMINER	
BARRY, CHESTER T	
ART UNIT	PAPER NUMBER

1724

DATE MAILED: 05/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	09/835,452	LEVY ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	Chester T. Barry	1724

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3-MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 09 April 2003.
- 2a) This action is FINAL.                  2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) 1-28 and 44 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 29-43 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
 If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>5</u> | 6) <input type="checkbox"/> Other: _____                                    |

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Applicant traverses the requirement for restriction on the grounds that the examiner did not provide an example of a process capable of making the elected claimed article by a different process than the non-elected claimed (withdrawn) process. The elected powder could have been made by a process that did not involve heating the mixture to a (i.e., not as high as) temperature below the melting point of the polymeric material, such as by the technique described at Fluid Bed Technique No. 2 ("agglomeration") (Perry's Handbook of Chemical Engineering, 5<sup>th</sup> Ed., at page 8/64 (right side), McGraw-Hill Book Co. 1973). ACCORDINGLY, THE RESTRICTION REQUIREMENT IS MADE FINAL.

Claims 29 – 43 are rejected under 35 USC §112(2<sup>nd</sup>) for failing to particularly point out and distinctly claim the subject matter for which patent protection is sought. The claims recite "low or zero melting index:high-density polyethylene binder." The specification does not provide any meaningful standard for distinguishing a "low . . . melting index high-density polyethylene binder" from a high-density polyethylene binder that does not meet the "low or zero melting index." The issue is not whether skilled artisans know what melt flow index is or how to measure<sup>1</sup> it. The issue is whether the skilled artisan is put on fair notice of which high density polyethylene binders meet the "low or zero melting flow index" limitation and which do not. The examiner agrees that the specification need not provide such a standard. The examiner agrees that the prior art

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<sup>1</sup> That is not to say there is but one way to measure MFI. A search revealed at least two standard test methods by which MFI is measured: ASTM 1238 and DIN 53.735. At least one prior art reference, USP 6127512, reports results as "g / 10 min" based on polymer samples tested at 170°C with an applied load of 5 kg. It is unclear whether these are the "standard" conditions of the ASTM 1238 test method. The DIN 53.735 method apparently uses the same MFI units of "g / 10 min," but the test appears to employ significantly different sample test conditions, i.e., a higher temperature (230°C) with a lighter load (2.16 kg). See USP 5639822. It is unclear how one might compare numeric property values obtained for different samples tested under these differing sample test conditions.

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may provide that standard. In this case, however, neither the specification nor the prior art provides a standard that renders the "low or zero melting index" limitation sufficiently precise, i.e., not unreasonably imprecise, to pass muster under §112(2<sup>nd</sup>).

Specifically, the prior art does not set forth reasonably clear standards for defining with a reasonable degree of precision what is meant to persons having ordinary skill in the art by the "low" melting index property limitation. Please see the table below.

The mere use by skilled artisans of a term of art, such as "low melting index," does not necessarily mean ~~the use of~~<sup>the</sup> that term in the context of a given application, namely, this application, passes muster under §112(2<sup>nd</sup>). Such is especially true in this case as shown by the broad and inconsistent range of numeric values of the MFI property in connection with various artisans' use of the term "low melting index" (See Table and accompanying figure).

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Table (see also accompanying figure)

Document	Publication Date	MFI characterization, i.e., "low" or "high"	Value of MFI
20030032702	2/2003	"low melt flow index" (polyethylene)	< 3 g / 10 min
6127512	10/2000	"desirably low melt flow index" (for PHA polymer)	"less than about 20 [g / 10 min]" (at 170°C with 5 kg load)
20020053119	5/2002	"relatively low melt flow index"	"as high as 5.0, or 10.0, or even higher"
6225421	5/2001	"ethylene polymer with a high melt flow index" and "ethylene polymer with a low melt flow index"	"M <sub>12</sub> of 5 to 1000 g / 10 min" "M <sub>15</sub> of 0.01 to 2 g / 10 min"
6476137	11/2002	"low melt flow index"	"less than 5"
RE37597	3/2002	"low' melt flow index" and "'high' melt flow index"	"from about 0.3 to less than [2 g / 10 min]" "from 2 to about 10 grams per minute [sic]"
6258876	7/2001	"low melt flow index"	"less than 3 g / 10 min"
6200677	3/2001	"low melt flow index"	"i.e., an MFI value of less than 6 [g / 10 min]"
5137975	8/1992	"polypropylene having a low melt flow index"	"e.g., in the range of 0.5 – 1.5 dg / min" [Exr. note: 5 – 15 g / min or 50 – 150 g / 10 min]
4965320	11/1990	Characterizing the polymer described in USP 3983070 as having a "low melt flow index"  Characterizing the polymer described in USP 4146521 as having a "low melt flow index"	"about 20"  in the range "2 – 30"
4299613	11/1981	"low melt flow index"	e.g., "5.0 or less"

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4299613

4965320

5137975

6200677

6258876

RE37597

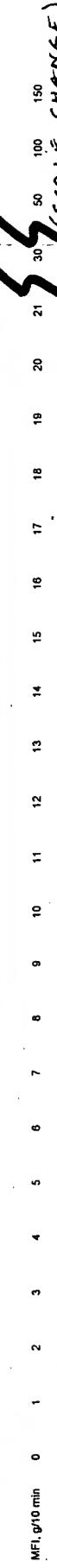
"HIGH MELT FLOW INDEX"

6476137

6225421

20020053119

6127512



## RANGES OF MFI CHARACTERIZED AS "LOW" BY THE CITED PRIOR ART DOCUMENTS - SHOWN IN BLACK ( [REDACTED] )

AT THE VERY LEAST IT IS UNCLEAR WHETHER POLYETHYLENE HAVING AN MFI OF 2 - 5 g/10 min has a "high" or "low" MFI. ACCORDING TO RE 37597, IT'S "HIGH" ACCORDING TO '613, '677, '137, '119, & '512, IT IS "LOW." THE DATA SHOW NO APPRECIATED UNDERSTANDING REASONABLY PRECISE BOUNDS TO "LOW MFI." CHESTER T. BARRY 2003

CHESTER T. BARRY  
PRIMARY EXAMINER

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Furthermore, with respect to each of claims 29 – 43, it is unclear in what respect the recitation “purification material” limits these claims directed to a granulated powder, if it limits the claims at all. While the recitation appears to limit the purpose or intended use of the powder, rather than the structure, chemical composition, or physical form of the powder itself, the skilled artisan nevertheless is not apprised of the nature of the limitations added by this recitation. In short, the scope of the claimed invention is not reasonably precise. This case is similar to that of Corning Glass Works v. Sumitomo, except this matter concerns a pending application rather than a presumptively valid issued unexpired patent. *Hence, opposite results or outcomes on this question are warranted.*

The issue raised immediately above is especially problematic in light of applicants’ argument distinguishing the claimed “granulated powder purification material” from the granules taught by Markell on the grounds that the latter does not describe “granules **used as a purification material**” (emphasis added) (Remarks, 4/9/03, at page 8 line 4-5).

Further confusion of exactly what is meant by “purification material” results from applicants’ argument that the claim 29 invention is distinguishable over Markell and Levy ‘542 and Levy ‘719 insofar as these references are said not to suggest using powders of inorganic materials agglomerated into granules by a polymeric binder “as the **filtration media**” (emphasis added, see Remarks 4/9/03 at page 9 line 10) whereas claim 29 recites “purification material.” It is unclear whether the “purification material” of

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the claim must also be a "filtration medium" or whether any purification material – even those that are not filtration media will meet the claim.

The rejection of claim 29 under "§112(1) for failing to particularly point out and distinctly claim the subject matter for which patent protection is sought" based on "zero melting index" (at page 8 of last Office action) is withdrawn in light of applicant's persuasive arguments set forth at pages 9 – 10 of the 4/6/03 response.

Claim 29 is rejected under 35 USC §103(a) as obvious over Markell for the reasons given previously. While Markell appears to soften the polymer, the reference – like applicants - does not appear to heat to the point of actually melting the polymer.

In light of the foregoing maintained rejections, the examiner disagrees that the application is now in condition for allowance.

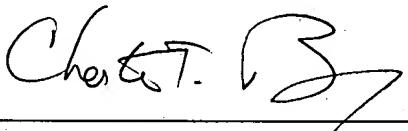
Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Respectfully,



**CHESTER T. BARRY  
PRIMARY EXAMINER**  
703-306-5921

5/3/03